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AUTHOR Campbell, Paul E.; Beers, Joan S.
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ABSTRACT

The Pennsylvania Plan, a statewide educational quality assessment program, first formulated ten educational goals to serve as bases of evaluation and program development. Two of the plan's three phases have been completed. Phase I involved organizing a Bureau of Quality Assessment to establish a working evaluation plan, including the development of measurement instruments and procedures for collecting data, hypotheses concerning pupil achievement, and computer analytic techniques. Phase II was designed to provide patterns of student performance on each of the ten educational goals, reconfirm hypotheses concerning the relationships between pupil achievements and school and community variables, and, based on these relationships, provide regression weights for use in subsequent phases, and establish the adequacy of the measuring instruments. Phase III is characterized by four analysis and reporting procedures: prediction of expected school means, comparison of school means, comparison of student distributions, and evaluation of student responses to key items. This data should enable school personnel to use the tools and techniques developed in Phases I and II. See also TM 000 609-612. (PR)

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Educational Quality Assessment

Phase II Findings

Section 1

The Pennsylvania Plan

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Educational Quality Assessment

Phase II Findings

Section I

The Pennsylvania Plan

by Paul B. Campbell, Director
Office of Research and Statistics
Joan S. Beers, Research Associate

Pennsylvania Department of Education
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Commonwealth of Pennsylvania
Raymond P. Shafer, Governor

Department of Education
David H. Kurtzman, Secretary

Commissioner for Basic Education
B. Anton Hess

Assistant Commissioner for
Programs and Services
Donald M. Carroll, Jr.

Bureau of Educational Quality Assessment
Thomas E. Kendig, Director (Acting)

Pennsylvania Department of Education
P.O. Box 911
Harrisburg, Pa. 17126

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The Pennsylvania Plan For The Assessment of Educational Quality

Legislation

Quality assessment in Pennsylvania had its beginning in Section 290.1 of Act 299, August 8, 1963. The act required the State Board of Education

> to develop or cause to be developed an evaluation procedure designed to measure objectively the adequacy and efficiency of the educational programs offered by the public schools of the Commonwealth. The evaluation procedure to be developed shall include tests measuring the achievements and performance of students pursuing all of the various subjects and courses comprising the curricula. The evaluation procedure shall be so constructed and developed as to provide each school district with relevant comparative data to enable directors and administrators to more readily appraise the educational performance and to effectuate without delay the strengthening of the district's educational program. Tests developed under the authority of this section to be administered to pupils shall be used for the purpose of providing a uniform evaluation of each school district and the other purposes set forth in this subdivision. The State Board of Education shall devise performance standards upon completion of the evaluation procedure required by this section.

Ten Goals of Quality Education

To carry out these mandates, the State Board of Education appointed from its members a committee on quality education. The committee, after meeting with civic and professional leaders from throughout the state, adopted, in March, 1965, the following Ten Goals of Quality Education to serve as the basis for assessment and as the basis for the development of programs:

1.1

I. *Quality education should help every child acquire the greatest possible understanding of himself and an appreciation of his worthiness as a member of society.*

II. *Quality education should help every child acquire understanding and appreciation of persons belonging to social, cultural and ethnic groups different from his own.*

III. *Quality education should help every child acquire to the fullest extent possible for him, mastery of the basic skills in the use of words and numbers.*

IV. *Quality education should help every child acquire a positive attitude toward the learning process.*

V. *Quality education should help every child acquire the habits and attitudes associated with responsible citizenship.*

VI. *Quality education should help every child acquire good health habits and an understanding of the conditions necessary for the maintaining of physical and emotional well-being.*

VII. *Quality education should give every child opportunity and encouragement to be creative in one or more fields of endeavor.*

VIII. *Quality education should help every child understand the opportunities open to him for preparing himself for a productive life and should enable him to take full advantage of these opportunities.*

IX. *Quality education should help every child to understand and appreciate as much as he can of human achievement in the natural sciences, the social sciences, the humanities and the arts.*

X. *Quality education should help every child to prepare for a world of rapid change and unforeseeable demands in which continuing education throughout his adult life should be a normal expectation.*

Phase I of the Pennsylvania Plan

The Bureau of Educational Quality Assessment was organized in June 1967, to translate the mandates of the act and the wishes of the State Board of Education into a working plan of assessment.

1.2

Given the ten goals of quality education and the mandate to develop performance standards based on these goals, the bureau's first task was to determine the extent to which students in the commonwealth are fulfilling the requirements of these goals. Through Phase I of the assessment plan, four major objectives were met:

Measurement Instruments For Each Of The Ten Goals Were Developed, Pilot Tested And Refined.

Measurement was given first priority by the bureau. For some goals, standardized published tests were found adequate. For other goals where no items were found adequate, the bureau staff, together with staff from the Bureau of Research, developed and pilot tested items.

By April 1968, a measurement package was ready and was administered to 5th graders and 11th graders in 100 schools throughout the state. Usable data was obtained from 1413 5th graders and 1285 11th graders.

Procedures For Collecting Data About School And Community Conditions Were Developed, Pilot Tested And Refined.

Pupil achievements must be considered in light of surrounding conditions. The assessment model takes into consideration those factors the pupil brings with him, those particular conditions the surrounding community offers him and those school characteristics which affect him. Some of this information was collected from state records but most of the information was furnished by school administrators, teachers and pupils.

Hypotheses Concerning Pupil Achievements And Those School And Community Conditions Affecting Achievements Were Tested And Analyzed.

It is in the analysis of the data where inferences are tested and the adequacy and efficiency of measurement items are analyzed. Each of the variables was analyzed through the use of correlational techniques and regression analysis. Each of the items was scrutinized with item analysis techniques.

Computer Analytic Techniques Were Developed, Tried Out And Refined.

Nothing succeeds as well as real data to test the adequacy of statistical formulas and the efficiency of computer programs. The Phase I data provided the opportunity to select from the many analytic techniques those most applicable for comparison and prediction of school means.

Phase I findings indicate that those factors which pupils bring with them—levels of previous learning and educational and occupational levels of parents—are most significant in determining how well pupils achieve. These findings are neither startling nor revealing. The more consequential findings are that these pupil factors do not account for all of the differences in pupil achievements. In fact, in many of the goals, less than half of the differences in pupil achievements is accounted for by socioeconomic and potential ability factors. The implications are that schools can and do make a difference.

Phase I Findings, published in December 1968, contains extensive information about the measuring procedures, the measuring instruments, the distributions of pupil scores and the relationships between pupil achievements and school and community characteristics.

Phase II of the Pennsylvania Plan

The assessment of educational quality must be translated into a practical working tool in order to be useful to school districts in appraising and strengthening their educational programs. Phase II was designed to:

1. Provide patterns of student performance on each of the ten goals.
2. Reconfirm hypotheses concerning the relationships between pupil achievements and school and community variables.
3. Based on these relationships, provide regression weights for use in subsequent phases.
4. Establish the adequacy of the measuring instruments.

Subsequent sections of *Phase II Findings* contain extensive information resulting from the collection and analysis of the Phase II data.

Phase III of the Pennsylvania Plan

Phase III of the Pennsylvania Plan is educational quality assessment in action. Beginning in the Fall of 1970, school personnel will be able to use the tools and techniques developed in Phase I and Phase II to assess the adequacy and efficiency of their programs. Assessment will be in terms of student performance, with differences among individuals, schools and communities taken into account.

Analysis and a form of reporting are so interlocked that one largely determines the other. Four analysis and reporting procedures will characterize Phase III:

Prediction Of Expected School Means

The first step in the analysis of the Phase III data will be to predict what the average pupil performance will be for pupils in a particular school on each of the ten goals.

Comparison Of School Means

The next step will be the comparison of the predicted school mean with the actual school mean. Statistical tests for the significance of differences will be applied.

Comparison Of Student Distributions

The actual distribution of individual student scores in percentage values will be compared to the predicted distribution of individual student scores. Statistical tests for the significance of differences will be applied.

Evaluation Of Student Responses To Key Items

Any prediction model empirically derived depends for its coefficients upon the current status of activity in the field. The possibility always exists that students may be achieving exactly as they are predicted to achieve on the basis of the conditions under which they operate, while their achievements are far from satisfactory in terms of thoughtful and serious value judgments of school, community and state department personnel. Therefore, an examination will be made of the proportion of students performing at levels judged to be unacceptable in light of more ideal criteria for each of the ten goals. Proportional frequencies of responses will be given for key items for each goal.

When a school participates in Phase III, school personnel can:

1. Examine discrepancies between expected mean student performance and actual mean student performance.
2. Examine discrepancies between normative distributions of student performance and actual distributions of individual performance.
3. Examine the proportion of students who fall in the undesirable response category on several key items.

Where serious negative discrepancies exist between predicted and actual student achievement, school personnel together with Department of Education personnel will be able to work together to modify programs in an attempt to correct the discrepancy.

Where actual achievement agrees with predicted achievement, parents, teachers and students may feel dissatisfied to remain in the expected output category in which they find themselves. Efforts may then be designed to move performance beyond the limitations suggested by the condition variables.

Where a significant number of students respond unsatisfactorily to key items, program modifications may be directed toward providing students with the opportunity to develop more satisfactorily.

Finally, where discrepancies are positive, Department of Education personnel and school personnel will ascertain what appear to be the most contributing factors so that these positive practices can be shared with other schools throughout the state.